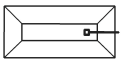
SKIMMER BASIN  **Detail**

A Skimmer Basin is a temporary basin with a trapezoidal spillway lined with filter fabric and equipped with a floating skimmer for dewatering from the top of the water column. It is often used at the outlet of larger drainage areas that discharge into or near sensitive watersheds. The skimmer basin is designed to dewater at a controlled rate, which helps ensure maximum efficiency of the device by allowing a greater settling time for sediment, and releasing the cleanest water from the top of the water column. Flow through the emergency spillway is a function of the skimmer basin.

AREAS OF USE:

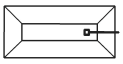
- Skimmer Basins may be used in areas that are near high quality waters, buffer zones, environmentally sensitive areas, and/or sensitive watersheds.
- Skimmer Basins may be used in areas where drainage areas are too large for a basin with a standard rock weir.

DESIGN CRITERIA:

- Drainage area should be 10 acres or less.
- Basin length to width ratio should be at least 2:1, but not exceed 6:1.
- Basin depth should be at least 2 feet.
- Minimum volume should be 1800 cubic feet per acre of disturbed area.
- Minimum surface area should be 325 square feet per cfs of Q_{10} peak inflow.
- Minimum dewatering time is 24 hours, and the maximum should be 72 hours.
- The emergency spillway should carry the peak runoff from the design storm with a minimum 1-foot of freeboard in the spillway.
- A minimum of 3 baffles shall be installed in the skimmer basin.

CONSTRUCTION SPECIFICATIONS:

- Construct the basin according to Erosion Control plans with the basin surface free of obstructions, debris, and pockets of low-density material.
- Limit dam height to 5 feet.
- Assemble and install the skimmer as instructed by the manufacturer.
- Install skimmer a minimum of 1 foot from the bottom of the basin.
- Coir fiber matting shall be installed under the outlet of the skimmer with minimum dimensions of 9-feet long by 6-feet wide.
- Anchor coir fiber mat with wooden stakes, steel reinforcement rebar, or metal staples.
- Emergency spillway shall have a trapezoidal cross section, with 3:1 or flatter sideslopes, and a minimum base width of 1/3 the skimmer basin width.
- Filter fabric on spillway shall be unrolled in the direction of flow, with edges buried at least five inches deep.
- Anchor filter fabric with 6-inch staples with a maximum spacing of 3 feet.
- Install 3 Coir Fiber Baffles in the skimmer basin, with a spacing of ¼ the basin length.
- Depending on expected duration of skimmer basin, permanently or temporarily seed all bare side slopes of basin.

SKIMMER BASIN  **Detail**

- Install matting for erosion control on exposed side slopes after seeding is completed.
- Install a Class B stone pad directly underneath the skimmer device to a minimum height of 12 in., and a minimal cross sectional area of 4 ft. by 4 ft.

MATERIAL SPECIFICATIONS:

- The skimmer shall meet the requirements of the Faircloth Skimmer.
- The filter fabric shall meet the requirements of Section 1056 of the Standard Specifications for Type 2 Fabric.
- Coir Fiber Baffles shall meet the requirements of the Special Provision.
- Coir Fiber Mat shall meet the requirements of the Special Provision.
- Permanent or temporary seed shall meet the requirements of Section 1060-4 of the Standard Specifications.
- Fertilizer for temporary seed shall meet the requirements of section 1060-2 of the Standard Specifications.
- Matting for erosion control shall meet the requirements of Section 1060-8 of the Standard Specifications.
- All embankment material shall be considered unclassified earth.

PAYMENT:

- Installation of measure:

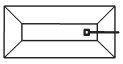
Silt Excavation	Cubic Yard
Coir Fiber Mat	Square Yard
Filter Fabric for Drainage	Square Yard
**“ Skimmer	EA
Stone for Erosion Control Class B	Ton
Seeding and Mulching	Acre
Seed for Temporary Seeding	Pound
Fertilizer for Temporary Seeding	Ton
Matting for Erosion Control	Square Yard

- Silt cleanout of device:

Silt Excavation	Cubic Yard

MAINTENANCE:

- Inspect basins after each significant rainfall.
- Basins should be cleaned out when sediment accumulations reach approximately one half the height of the first baffle.
- Check skimmer to make sure that it is not clogged with sediment.
- Check fabric lined spillway for damage.
- Check coir fiber mat at outlet of skimmer for replacement.

SKIMMER BASIN  **Detail**

- During winter, the skimmer should be supported at an angle such that water does not stand in the barrel as this could result in the water freezing and plugging the skimmer.
- Repair seed and replace matting on side slope areas that have eroded or have become damaged by equipment from silt cleanout.
- Remove sediment that may accumulate on stone pad underneath skimmer device.
- Inspect baffles after each rain event for erosion damage.

TYPICAL PROBLEMS:

- Inadequate basin capacities – basins are not constructed to dimensions specified on plans.
- Silt accumulations are not removed when needed.
- Erosion occurring at inlet end when basin is too deep.
- Presents a safety problem if basins are too deep.
- Skimmer becomes clogged.
- Stone pad underneath skimmer device gets covered with sediment and skimmer becomes embedded in bottom of basin.
- Filter fabric for the emergency spillway is not keyed in well and water washes underneath it and the dam fails.
- Water flows under or around coir fiber baffles and settling time decreases instead of increasing.
- Equipment damages side slopes of basin during silt cleanout.
- Erosion of side slopes occurs causing excess sediment to wash into the basin.